数学与系统科学研究院

计算数学所学术报告

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报告题目：

Computational Conformal Geometry with Applications

邀请人：　　洪佳林 研究员

报告时间：　**2013年8月1日（周四）**

下午**14:30~15:30**

报告地点：　科技综合楼三层**301**

计算数学所小报告厅

Abstract:

Retrieval and processing of three dimensional geometric information have become more and more important in many applications including computer graphic, digital media production, security and medical images, etc. To process 3D geometric information in the above mentioned application, effective global parametrization is generally needed. Among many parametrization schemes, the conformal parametrization proposed by S. T. Yau is the most powerful one and can deal with manifolds with arbitrary number of genuses. The theories of the conformal parametrization can be realized in computer based on discrete Riemann mapping and Ricci flow. To retrieve 3D coordinates of an object, traditional laser scanner and structured light image scanner can be employed. For the laser scanner, one would need to generate surface meshes from point clouds. On the other hand, for the structured light scanner, the surface meshes can be obtained easily from the scanned images. In this talk, a portable 3D structured light scanner and images and videos captured by the scanner will be shown. Both the theoretical foundation of conformal parametrization and robust numerical scheme will be introduced. We will also present some examples to show you how conformal parametrization can be applied on 3D image and video procession.

欢迎大家参加！